

# BOARD REVIEW QUESTIONS: STRESS TESTING



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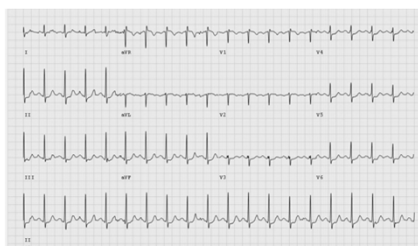
19<sup>th</sup>  
ANNUAL

## BOARD REVIEW QUESTION #1

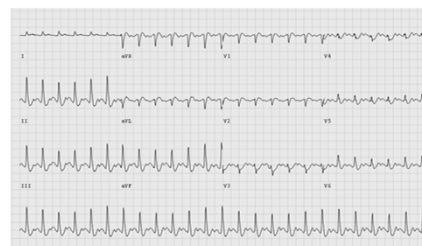
- 55 YO MAN WITH HTN, ↑LIPIDS, NIDDM.
- EXERTIONAL CHEST PAIN ↑ FREQUENCY OVER 2 MONTHS
- REFERRED FOR STRESS ECHOCARDIOGRAPHY
  - EXERCISED ON TREADMILL, STANDARD BRUCE PROTOCOL, 6 MIN



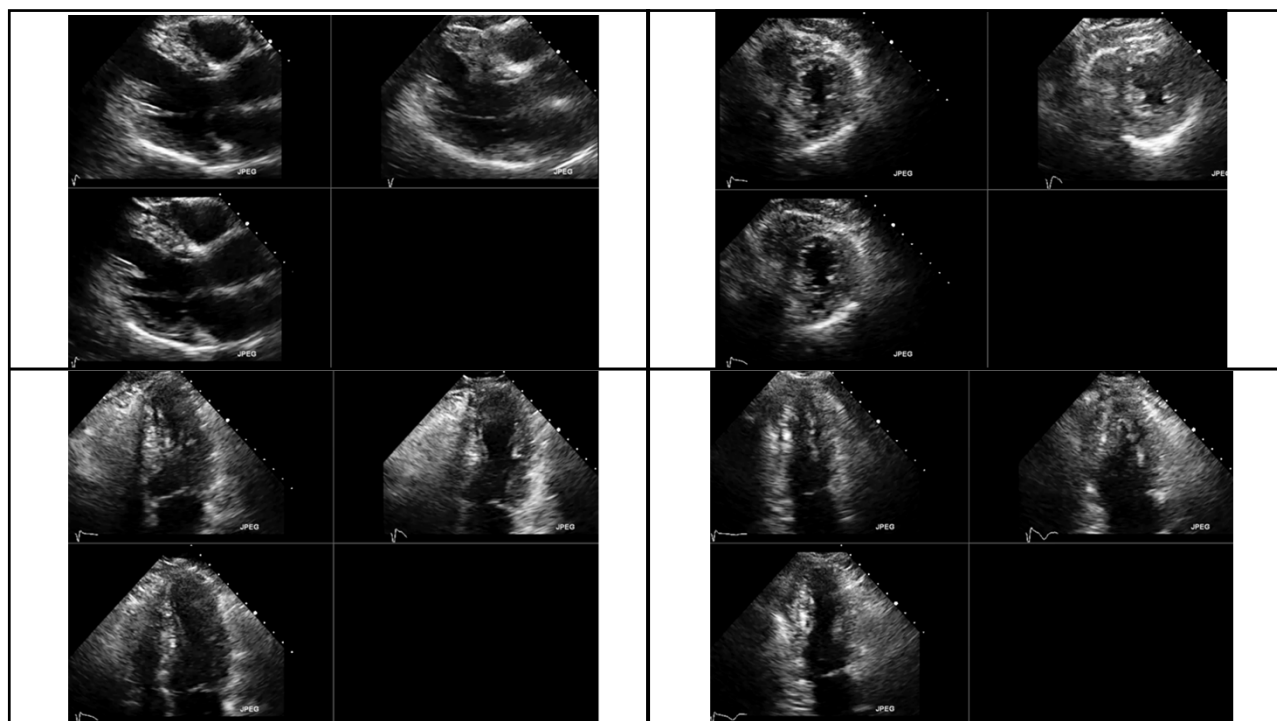
Baseline  
HR – 90  
BP – 144/84



3 min, mild CP  
HR – 100  
BP – 160/100



6 min, bad CP  
HR – 150  
BP – 130/85



## BOARD REVIEW QUESTION #1

WHAT DOES THIS STRESS ECHO DEMONSTRATE?

- 1) NORMAL ECG AND ECHO RESPONSE TO EXERTION
- 2) FALSE POSITIVE ECG – NORMAL EXERCISE ECHO
- 3) ECG AND ECHO SUGGEST – ANTERIOR/SEPTAL ISCHEMIA
- 4) ECG AND ECHO SUGGEST – INFEROLATERAL ISCHEMIA
- 5) ECG AND ECHO SUGGEST – ISOLATED APICAL ISCHEMIA

### **BOARD REVIEW QUESTION #1**

WHAT IS THE CORONARY ARTERY STATUS?

- 1) NORMAL CORONARY ARTERIES
- 2) DISTAL 70% STENOSIS OF THE LAD
- 3) PROXIMAL 50% STENOSIS OF OM1
- 4) MID TOTAL OCCLUSION OF LAD
- 5) TOTAL OCCLUSION OF RCA WITH POOR COLLATERALS

### **BOARD REVIEW QUESTION #1**

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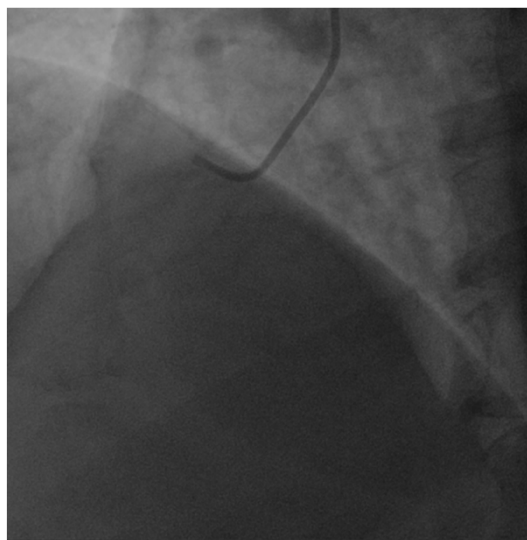
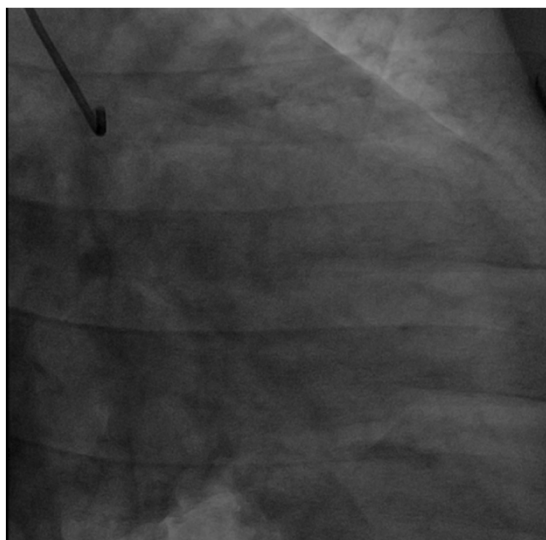
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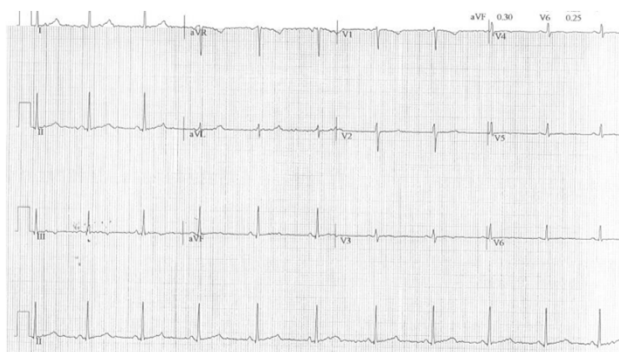
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## **LATER THAT DAY**



## BOARD REVIEW #2 - 52 YO FEMALE SMOKER

- 6 MO POST BARIATRIC SURGERY W/40 LB LOSS (CURRENT BMI 37)
- NEW SUBSTERNAL CHEST PAIN USUALLY WITH EXERTION, OCC AT REST
- TREADMILL STRESS ECHO PERFORMED:



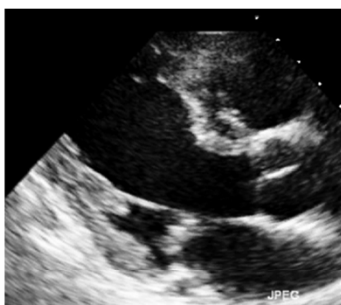
REST UPRIGHT



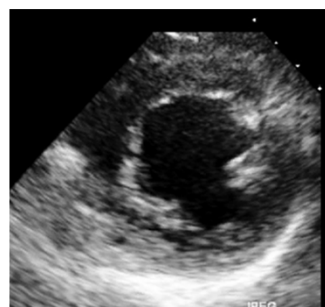
PEAK STRESS

9 min, Bruce – nl BP response  
Mild CP / moderate SOB

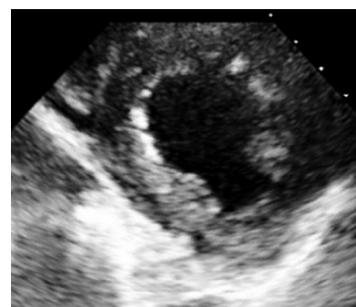
REST

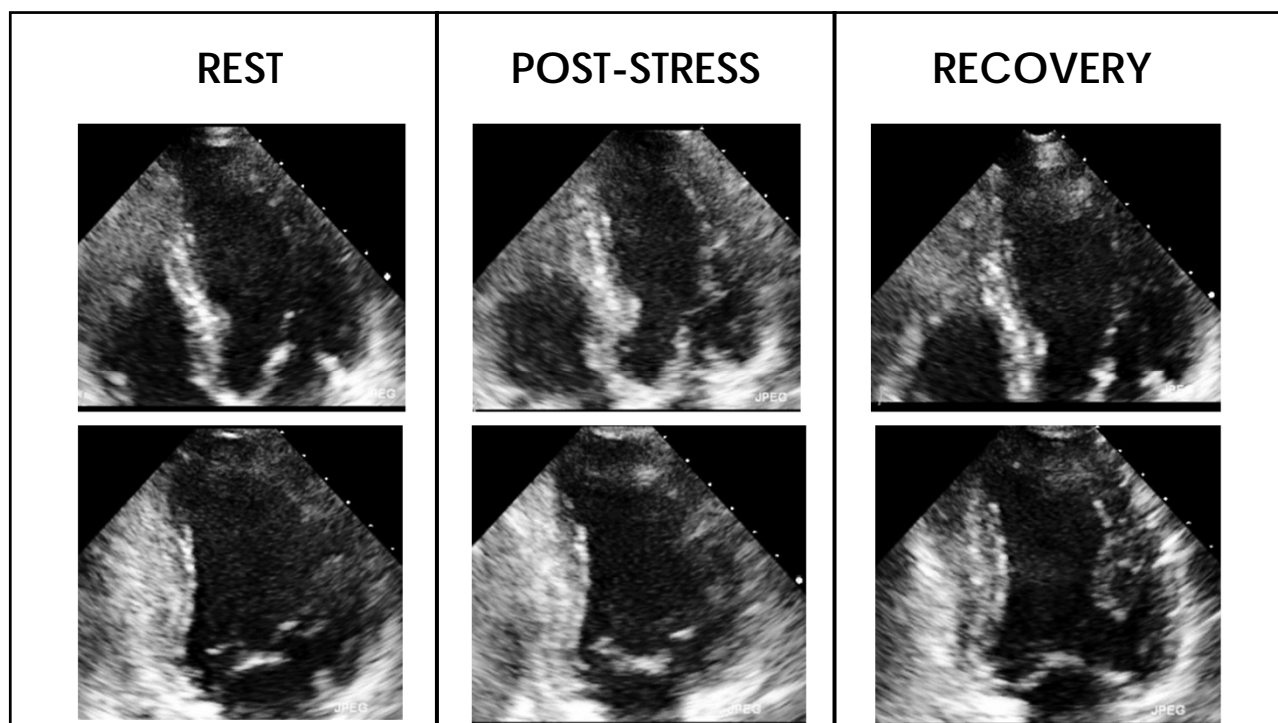


POST-STRESS



RECOVERY





## BOARD REVIEW #2 - 52 YO FEMALE SMOKER

YOU MAKE THE FOLLOWING INTERPRETATION

- 1) NORMAL STRESS ECHO – NO ISCHEMIA
- 2) ABNORMAL STRESS ECHO – INFERIOR ISCHEMIA
- 3) ABNORMAL STRESS ECHO – ISCHEMIA IN RECOVERY PHASE
- 4) ABNORMAL STRESS ECHO – TRANSIENT ISCHEMIC DILATION
- 5) UNINTERPRETABLE – EXERCISE ECG INADEQUATE QUALITY

**BOARD REVIEW #2 - 52 YO FEMALE SMOKER**

APPROPRIATE NEXT STEP IN THE MANAGEMENT OF THIS PATIENT

- 1) CONGRATULATE ON PROGRESS, ENCOURAGE ONGOING WGT LOSS
- 2) LIKELY RCA ISCHEMIA – MEDICAL MX OF CHRONIC STABLE ANGINA
- 3) LIKELY RCA ISCHEMIA – REFER FOR CORONARY ARTERIOGRAPHY
- 4) MULTIVESSEL DISEASE – EMERGENT COR. ARTERIOGRAPHY / CABG
- 5) UNINTERPRETABLE – RETURN NEXT WEEK FOR ECHO CONTRAST

**BOARD REVIEW #2 - 52 YO FEMALE SMOKER**

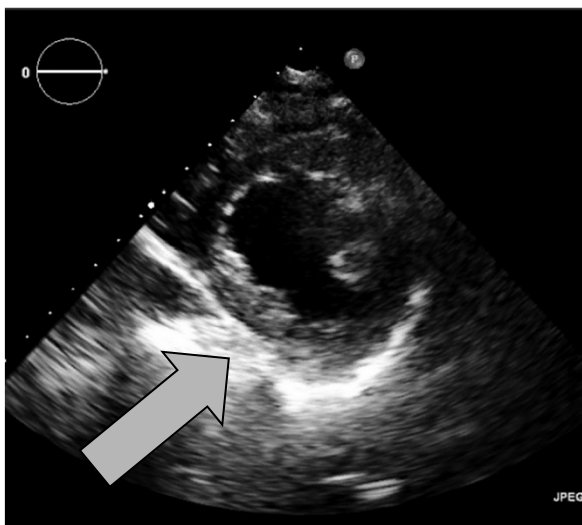
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**PSEUDOINFARCTION PATTERN**

- PRESSURE FROM ABDOMINAL CONTENTS FLATTENS INFERIOR WALL IN DIASTOLE
- CAVITY BECOMES ROUNDER WITH GENERATION OF SYSTOLIC PRESSURE



### BOARD REVIEW Q#3

WHICH OF THE FOLLOWING PATIENTS IS AN APPROPRIATE CANDIDATE FOR ECHOCARDIOGRAPHIC STRESS TESTING?

1. 42 Y/O MAN WITH EXERTIONAL SSCP AT LOW LEVEL EFFORT
2. 23 Y/O WOMAN WITH SPORADIC SHARP L-SIDED CHEST PAIN
3. 56 Y/O MAN W/HTN, NORMAL ECG, POST-PRANDIAL CHEST BURNING
4. 38 Y/O WOMAN, SMOKER, NONSPECIFIC ST/T WAVE CHANGES, W/CHEST TIGHTNESS CLIMBING  $\geq 1$  FLIGHT OF STAIRS
5. 80 Y/O WOMAN W/HTN/HYPERLIPIDEMIA WITH OCCASIONAL REST CHEST TIGHTNESS AND NEW INFERIOR Q WAVES. USES CANE.

### BOARD REVIEW Q#3

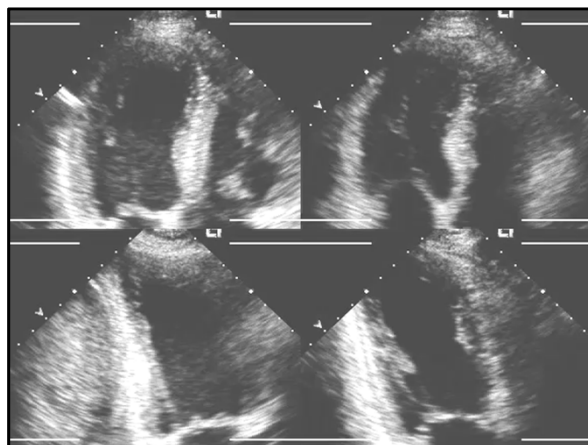
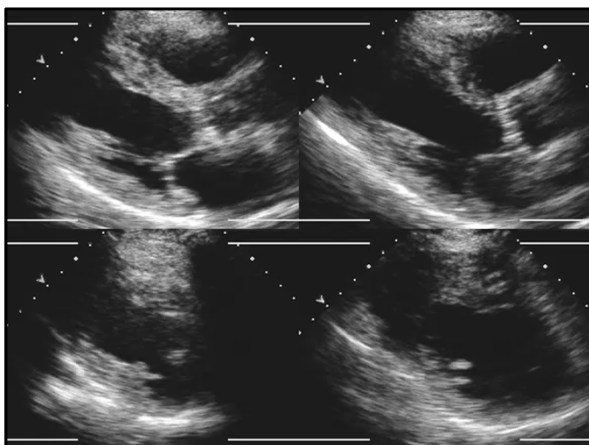
**Table A. Diamond and Forrester Pre-Test Probability of Coronary Artery Disease by Age, Sex, and Symptoms \***

Age (years)	Sex	Typical/Definite Angina Pectoris	Atypical/Probable Angina Pectoris	Nonanginal Chest Pain
$\leq 39$	Men	Intermediate	Intermediate	Low
	Women	Intermediate	Very low	Very low
40–49	Men	High	Intermediate	Intermediate
	Women	Intermediate	Low	Very low
50–59	Men	High	Intermediate	Intermediate
	Women	Intermediate	Intermediate	Low
$\geq 60$	Men	High	Intermediate	Intermediate
	Women	High	Intermediate	Intermediate

**High:** >90% pre-test probability. **Intermediate:** between 10% and 90% pre-test probability. **Low:** between 5% and 10% pre-test probability. **Very low:** <5% pre-test probability. \*Modified from the ACC/AHA 2002 Guideline Update for Exercise Testing (30a).

**BOARD REVIEW Q#4 - 40 YEAR OLD MALE EXECUTIVE**

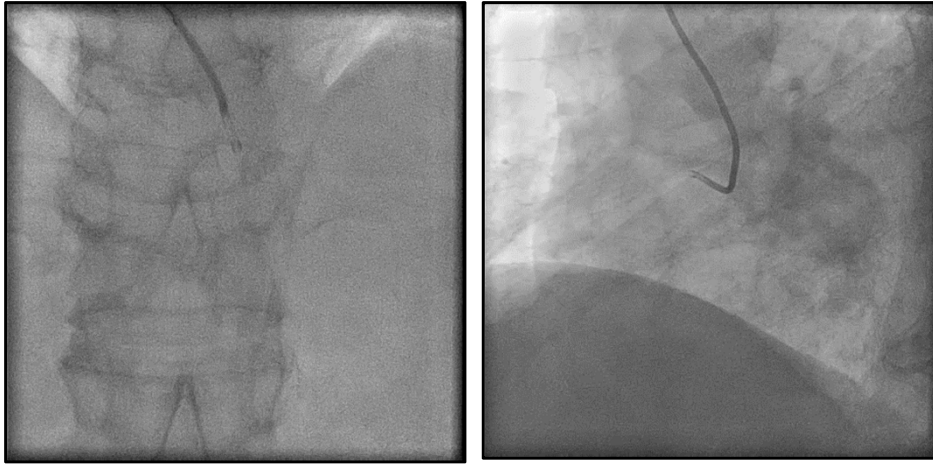
- RF'S INCLUDE – HTN, HYPERLIPIDEMIA, SMOKING
- RECENT ONSET "HEARTBURN" & ERUCTION WITH EXERTION
- EX ECHO – 6 MIN (BRUCE PROTOCOL); HEARTBURN/ECG CHANGES

**BOARD REVIEW Q#4 - 40 YEAR OLD MALE EXECUTIVE**

WHAT DOES THIS ECHO DEMONSTRATE?

1. NORMAL PERFUSION
2. RCA ISCHEMIA
3. CIRCUMFLEX ISCHEMIA
4. LAD ISCHEMIA
5. MULTIVESSEL DISEASE

**CATH**

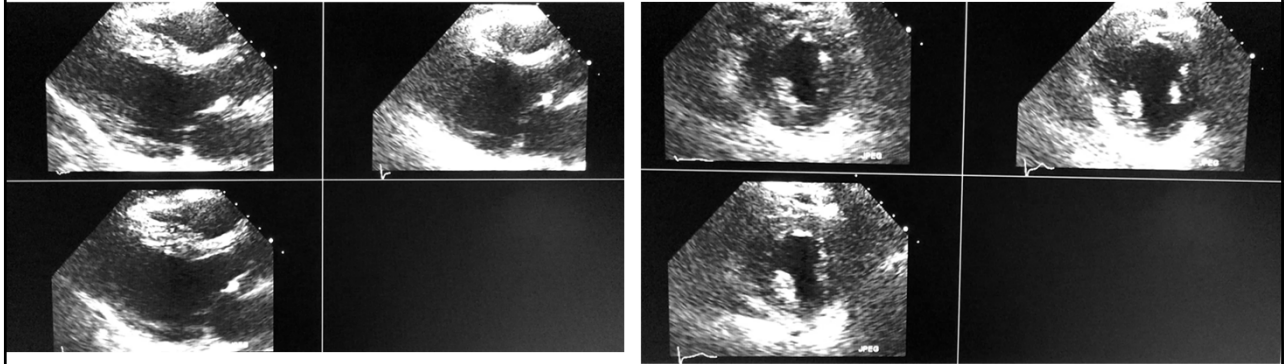
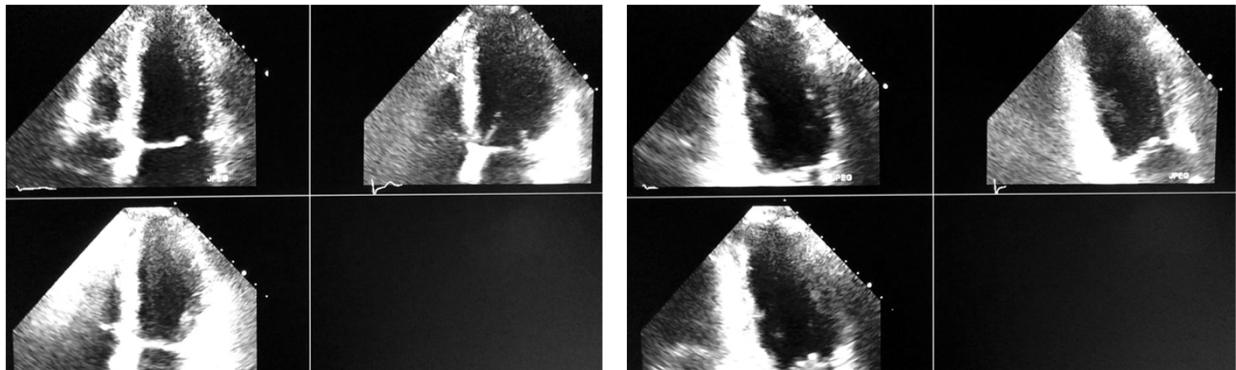


**CATH**



**BOARD REVIEW Q#5 – 56 Y/O MAN WITH CAC**

- ASIAN MAN W/DYSLIPIDEMIA & HTN. SYSTEMIC SCLEROSIS
- CT SCAN TO R/O ILD. NO FIBROSIS, BUT “MODERATE” CAC
- “VERY LIGHT” TIGHTNESS, “SOMETIMES” WHILE WALKING.

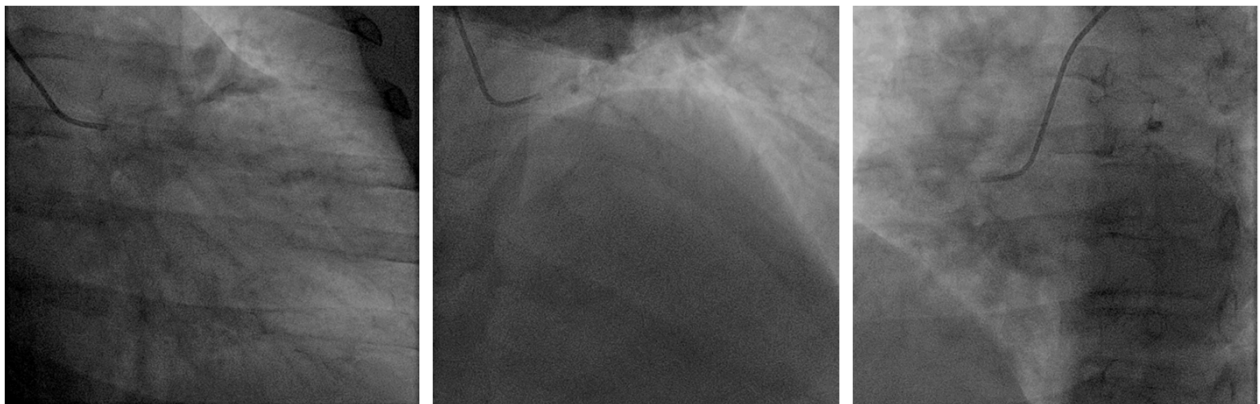
**BOARD REVIEW Q#5 – 56 Y/O MAN WITH CAC**

**BOARD REVIEW Q#5 – 56 Y/O MAN WITH CAC**

WHAT IS YOUR INTERPRETATION OF THIS TREADMILL STRESS?

1. NORMAL
2. RCA ISCHEMIA
3. CIRCUMFLEX ISCHEMIA
4. LAD ISCHEMIA
5. MULTIVESSEL DISEASE

**BOARD REVIEW Q#5 – 56 Y/O MAN WITH CAC**





Thank You!

